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Claims

[c1] 1. A method of reducing number of computations when modeling several systems using a neural network, said method comprising:

receiving a first data set characterizing the behavior of a first system, said first data set containing a first plurality of data elements;

modeling said first system based on said first data set using said neural network, wherein a first set of weights are generated by said modeling said first system;

receiving a second data set characterizing the behavior of a second system, said second data set containing a second plurality of data elements;

determining whether said first plurality of data elements follow a similar pattern as said second plurality of data elements; and

modeling said second system based on said second data set using said neural network, wherein said first set of weights are used as initial weights while modeling said second system if said first plurality of data elements follow a similar pattern as said second plurality of data elements.

[c2] 2. The method of claim 1, further comprising storing said first set of weights and a second set of weights in a non-volatile storage, wherein said second set of weights are generated by modeling said second system.

[c3] 3. The method of claim 1, wherein random values are used as initial weights while modeling said second system if said first plurality of data elements do not follow a similar pattern as said second plurality of data elements.

[c4] 4. The method of claim 1, wherein said determining comprises:
fitting said first data set into a first curve, wherein said first curve is represented in the form of a first polynomial function having a first set of coefficients;
fitting said second data set into a second curve, wherein said second curve is represented in the form of a second polynomial function having a second set of coefficients;
computing a distance between said first set of coefficients and said second set of coefficients; and
checking whether said distance is less than a threshold, wherein said first plurality of data elements are determined to follow a similar pattern as said second plurality of data elements if said distance is less than said threshold.

[c5] 5. The method of claim 4, wherein each of said first plu-

rality of data elements and said second plurality of data elements is normalized to a pre-specified range prior to said fitting.

[c6] 6. The method of claim 4, wherein each of said first set of coefficients and said second set of coefficients is normalized to a pre-specified range prior to said computing.

[c7] 7. The method of claim 4, wherein each of said first data set and said second data set comprises stock share prices or corresponding stocks.

[c8] 8. A computer readable medium carrying one or more sequences of instructions causing a digital processing system reduce number of computations in a neural network modeling several data sets, wherein execution of said one or more sequences of instructions by one or more processors contained in said digital processing system causes said one or more processors to perform the actions of:
receiving a first data set characterizing the behavior of a first system, said first data set containing a first plurality of data elements;
modeling said first system based on said first data set using said neural network, wherein a first set of weights are generated by said modeling said first system;

receiving a second data set characterizing the behavior of a second system, said second data set containing a second plurality of data elements;

determining whether said first plurality of data elements follow a similar pattern as said second plurality of data elements; and

modeling said second system based on said second data set using said neural network, wherein said first set of weights are used as initial weights while modeling said second system if said first plurality of data elements follow a similar pattern as said second plurality of data elements.

[c9] 9. The computer readable medium of claim 8, further comprising storing said first set of weights and a second set of weights in a non-volatile storage, wherein said second set of weights are generated by modeling said second system.

[c10] 10. The computer readable medium of claim 8, wherein random values are used as initial weights while modeling said second system if said first plurality of data elements do not follow a similar pattern as said second plurality of data elements.

[c11] 11. The computer readable medium of claim 8, wherein said determining comprises:

fitting said first data set into a first curve, wherein said first curve is represented in the form of a first polynomial function having a first set of coefficients;
fitting said second data set into a second curve, wherein said second curve is represented in the form of a second polynomial function having a second set of coefficients;
computing a distance between said first set of coefficients and said second set of coefficients; and
checking whether said distance is less than a threshold, wherein said first plurality of data elements are determined to follow a similar pattern as said second plurality of data elements if said distance is less than said threshold.

[c12] 12. The computer readable medium of claim 11, wherein each of said first data set and said second data set comprises stock share prices or corresponding stocks.

[c13] 13. An apparatus in a digital processing system said apparatus reducing number of computations when modeling several systems using a neural network, said apparatus comprising:
means for receiving a first data set characterizing the behavior of a first system, said first data set containing a first plurality of data elements;
means for modeling said first system based on said first data set using said neural network, wherein a first set of

weights are generated by said modeling said first system;

means for receiving a second data set characterizing the behavior of a second system, said second data set containing a second plurality of data elements;

means for determining whether said first plurality of data elements follow a similar pattern as said second plurality of data elements; and

means for modeling said second system based on said second data set using said neural network, wherein said first set of weights are used as initial weights while modeling said second system if said first plurality of data elements follow a similar pattern as said second plurality of data elements.

[c14] 14. The apparatus of claim 13, further comprising means for storing said first set of weights and a second set of weights in a non-volatile storage, wherein said second set of weights are generated by modeling said second system.

[c15] 15. The apparatus of claim 13, wherein random values are used as initial weights while modeling said second system if said first plurality of data elements do not follow a similar pattern as said second plurality of data elements.

[c16] 16. The apparatus of claim 13, wherein said means for determining is operable to:

fit said first data set into a first curve, wherein said first curve is represented in the form of a first polynomial function having a first set of coefficients;

fit said second data set into a second curve, wherein said second curve is represented in the form of a second polynomial function having a second set of coefficients;

compute a distance between said first set of coefficients and said second set of coefficients; and

check whether said distance is less than a threshold, wherein said first plurality of data elements are determined to follow a similar pattern as said second plurality of data elements if said distance is less than said threshold.